Department of Energy

ROCKY FLATS PROJECT OFFICE
10808 HIGHWAY 93, UNIT A
GOLDEN, COLORADO 80403-8200

MAR 1 6 2005

05-DOE-00157

Mr. Steve Gunderson
Rocky Flats Cleanup Agreement Project Coordinator
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1502

Mr. Mark Aguilar
Rocky Flats Cleanup Agreement Team Lead
U.S. Environmental Protection Agency, Region VIII
999 18th Street, Suite 300
Denver, Colorado 80202-2466

Dear Gentlemen:

The U.S. Department of Energy Rocky Flats Project Office is transmitting to your respective agencies copies of the Final Interim Measure/Interim Remedial Action (IM/IRA) for the Original Landfill for your approval. We have incorporated, where applicable, text changes from your comments on the Draft Final IM/IRA that we received electronically from the Colorado Department of Public Health and Environment staff, Carl Spreng, on March 4, 2005.

In addition, we have enclosed along with this correspondence our responses to your comments on the Final Draft IM/IRA.

If you should have any additional questions regarding this document, please contact Bob Birk at (303) 966-5921, or you may contact me at (303) 966-2282.

Sincerely,

Joseph A. Legare, Director
RFPO Project Management

Enclosures

Revised 01/05

CORRES. CONTROL
INCOMING LTR NO.

00146 RF05

DUE DATE

ACTION

RECEIVED

2005 MAR 22 A 7:33

CORRESPONDENCE CONTROL

Department of Energy

ROCKY FLATS PROJECT OFFICE
10808 HIGHWAY 93, UNIT A
GOLDEN, COLORADO 80403-8200

MAR 16 2005

05-DOE-00157

DIST.	LTR	ENC
BERARDINI, J.H.	X	X
BOGNAR, E.S.	X	X
BROOKS, L.	X	X
CARPENTER, M.	X	X
CIUCCI, J.A.		
CROCKETT, G. A.		
DECK, C. A.	X	X
DEGENHART, K. R.	X	X
DEL VECCHIO, D.		
DIETER, T. J.		
FERRERA, D. W.	X	X
GIACOMINI, J. J.		
GILPIN, H.		
LINDSAY, D. C.	X	X
LONG, J. W.		
MARTINEZ, L. A.	X	X
NAGEL, R. E.	X	X
NESTA, S.	X	X
~~NORTH, K.~~		
SHELTON, D. C.	X	X
SPEARS, M. S.	X	X
TUOR, N. R.	X	X
WIEMELT, K.	X	X
WILLIAMS, J. L.		
ZAHM, C.	X	X
Ward, D.	X	X
Davis, B.	X	X

COR. CONTROL	X	X
ADMIN. RECORD	X	X
PATS		

Reviewed for Addressee
Corres. Control RFP

3/22/05 — Date — By

Ref. Ltr. #

DOE ORDER #
5400.1

Mr. Steve Gunderson
Rocky Flats Cleanup Agreement Project Coordinator
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Sincerely,

Joseph A. Legare, Director
RFPO Project Management

RECEIVED
MAR 22 2005

Enclosures

ADMIN RECORD

IA-A-002579

cc w/o Encls.:
B. Birk, HQCPM, RFPO
N. Castaneda, HQCPM, RFPO
D. Shelton, K-H
K. Wiemelt, K-H
B. Davis, K-H
C. Spreng, CDPHE
V. Moritz, USEPA
Administrative Record

DOE Response to EPA Comments on the Final Draft IM/IRA for the Original Landfill

1. Section 5 - Sampling
The original comment suggests sampling for radionuclides, SVOCs and pesticides in addition to VOC and metals. DOE's response is not sufficient. There will be two components of flow migrating through the waste: infiltration and high ground water. The OLF cover will not prevent infiltration, plus high ground water levels will continue to move into and through the waste. These two flow components have the ability to continue mobilizing contaminants. Therefore, leachate/shallow ground water needs to be sampled quarterly consistent with the 5-year review process for radionuclides, SVOCs, pesticides, VOCs and metals.

DOE Response: From our previous response to EPA's comment, the Original Landfill does not generate leachate that needs to be managed. As presented in the IM/IRA, the landfill has been inactive for over 35 years and the groundwater has been monitored since 1991. The review of this data and including the most recent groundwater data (2003), clearly indicates that the OLF has not impacted the downgradient groundwater quality. Groundwater data has also showed very low levels of contaminants within the landfill boundary, decreasing concentrations of contaminants over time, and no migration beyond the boundaries of the landfill. The contaminates within the landfill are predominately VOCs, metals and Uranium. Therefore, these constituents have been selected for monitoring by the post-accelerated action groundwater monitoring program.

2. Section 5 - Revegetation
This IM/IRA commits to revegetate the soil cover. A site-specific revegetation plan should therefore be developed based on the approved sitewide Revegetation Plan. Elements of the site-specific revegetation plan will need to include seedbed preparation, seed mix(es), and success criteria.

DOE Response: DOE has committed to revegetate the cover of the OLF in the IM/IRA. Elements of the site-specific seeding plan will be a part of the accelerated action design and will include seedbed preparation, seed planting, hydromulching, and placement of erosion matting. The seed mix will be consistent with the most current site-wide revegetation plan.

3. Section 7 - Sampling of leachate
Same as comment 1 on Section 5 above, i.e., a full suite of analytes is needed.

DOE Response: See response to comment 1.

4. Section 7.2 - Area grading
Comment response indicates that "additional text will be added," but it was not. Need to see revised text for Section 7.2.

DOE Response: Text in Section 7.2 has been added to address the original comment.

5. Section 7.2 - Revegetation
DOE states that OLF revegetation will have the same success as the 903 Lip Area. This is only the case if conditions are similar - subsurface, soil chemistry, slopes, etc. It would be useful to have a description of the 903 Lip Area from the subsurface to the top/vegetation layer to verify this claim. Given the success at the 903 Lip Area, there should be no problem agreeing to

revegetation success criteria. Revegetation is an issue that impacts not only the landfills but also many other areas of the site.

DOE Response: The revegetation of the soil cover at the OLF will be accomplished using procedures similar to that used at the 903 Pad. Site specific steps will be presented in the accelerated action design. Successful revegetation has occurred throughout the RFETS on Rocky Flats Alluvium type soils. This type of soil will be used for the OLF cover and is present at the 903 Pad. Therefore, no further characterization of the soils is needed. Revegetation success criteria and the revegetation of the RFETS IA are beyond the scope of the IM/IRA.

6. Section 7.4 - Soil cover

In this section EPA requested inclusion of the exact same text presented in the Present Landfill IM/IRA. This wording is to make the 2 documents consistent and to meet ARARs.

DOE Response: The text presented in the IM/IRA adequately describes the soil cover for the Original Landfill without the text from the Present Landfill IM/IRA.

7. Section 10 - Table 10.1

DOE did not respond to EPA's comment regarding the need to include sampling for Americium/Plutonium in surface water locations.

DOE Response: The IMP has determined the Uranium is the only radionuclide constituent of concern at the surface water monitoring stations upstream and downstream of the Original Landfill. Americium and Plutonium will not be added to the list of constituents at the surface water monitoring stations.

8. Section 6 Figures

Figures 6.1 (grading plan) and 6.2 (cross-section) pertain to the "old" alternative and therefore don't show a buttress. The buttress alternative is shown in Figure 3. Since this is now the preferred alternative, an additional figure should show a conceptual grading plan with a buttress approximately located.

DOE Response: This figure will be added.

9. Integrated Flow and Fate/Transport Model document

Responses to comments by other parties indicate that the final version of this document is not intended to contain a sensitivity/uncertainty analysis. EPA disagrees with this position. The revised version of this document needs to include a sensitivity/uncertainty analysis.

DOE Response: The integrated flow model was prepared to predict the groundwater levels to be used in the stability analysis of the OLF with a buttress. The stability analysis uses a conservatively high groundwater level predicted from the integrated flow model for the 100-year wettest year, which also coincides with a significant earthquake event. The integrated flow model and the stability analysis were conducted with these "worse-case" conditions. Therefore, a sensitivity/uncertainty analysis would not add value to the stability evaluation and is not required.

DOE Response to CDPHE Comments on the Final Draft IM/IRA for the Original Landfill

1. Section 4.5.2 – Well 61093
Fairly recent data from the ICPMS study included data for Well 61093. At 250 pCi/L, the results are significantly higher than background. If these data are not currently included in the SWD, they should be added.

DOE Response: The ICPMS data is in SWD.

2. Section 8 / Appendix A - ARARs
The Draft Ground Water and Soil Remedial Action Objectives Technical Memorandum as well as proposed post-closure monitoring criteria for ground water both establish the state surface water quality standards as the standards for ground water. The Colorado Basic Standards and Methodologies for Surface Water should remain an ARAR.

DOE Response: The groundwater monitoring wells at the OLF are accelerated action performance monitoring wells, and not wells designated by the IMP as AOC or sentinel wells. Well 11104, which is close to the OLF has been designated as an AOC well and will be monitored to assess the impact of the groundwater on surface water. Given this, the Colorado Basic Standards and Methodologies for Surface Water is a site-wide ARAR, but not an ARAR specific to the OLF.

3. Section 7.3.1 – Soil Cover (new comment)
The commitment to revegetate the soil cover should reference the already approved sitewide Revegetation Plan. That Plan states that areas outside the IA may require modifications to the sitewide plan to fit the specific setting.

DOE Response: DOE has committed to revegetate the cover of the OLF in the IM/IRA. Elements of the site-specific seeding plan will be a part of the accelerated action design and will include seedbed preparation, seed planting, hydromulching, and placement of erosion matting. The seed mix will be consistent with the most current site-wide revegetation plan.

4. Integrated Flow and Fate and Transport Modeling for the OLF – Page 4
The response states that a sensitivity and uncertainty analysis "could be performed", but does not commit to doing it. Performing a sensitivity and uncertainty analysis is important because, of all the geotechnical parameters, hydraulic properties used in model studies are probably the most difficult to determine in-situ, variable and uncertain. Even in the best model studies, there are usually differences between predicted and measured performance. Because there are no measured groundwater parameters for the Original Landfill Site; no model study that has compared the predicted and the measured system response of the as-built system with the proposed boundary conditions (that is, proposed grade, new buttress drain locations, and fill depths); and system response is known to be highly dependent on site-specific localized conditions, it is unreasonable to expect that assumed single parameter values used in a model study will provide an accurate representation of risk associated with the proposed design. Sensitivity and uncertainty analyses should therefore be performed on a calibrated model with the proposed grades, buttress and buttress drain, and fill depths. The results should be submitted in a revised report on integrated flow modeling for the Original landfill.

5

In addition, in order to thoroughly review this modeling effort, it would be useful to have the pertinent modeling parameters available, such as top of bedrock elevations, Kd distributions for all modeled layers, etc. The State requests that these parameters be provided electronically.

DOE Response: The integrated flow model was prepared to predict the groundwater levels to be used in the stability analysis of the OLF with a buttress. The integrated flow model was also calibrated to match the historical hydrogeologic behavior at the OLF. The stability analysis uses a conservatively high groundwater level predicted from the integrated flow model for the 100-year wettest year, which also coincides with a significant earthquake event. The integrated flow model and the stability analysis were conducted with these "worse-case" conditions. Therefore, a sensitivity/uncertainty analysis would not add value to the stability evaluation and is not required.

6/15

Stoller

Rocky Flats Environmental Technology Site
Telephone: (303) 966-2225 Fax: (303) 966-7228

FAX COVER SHEET

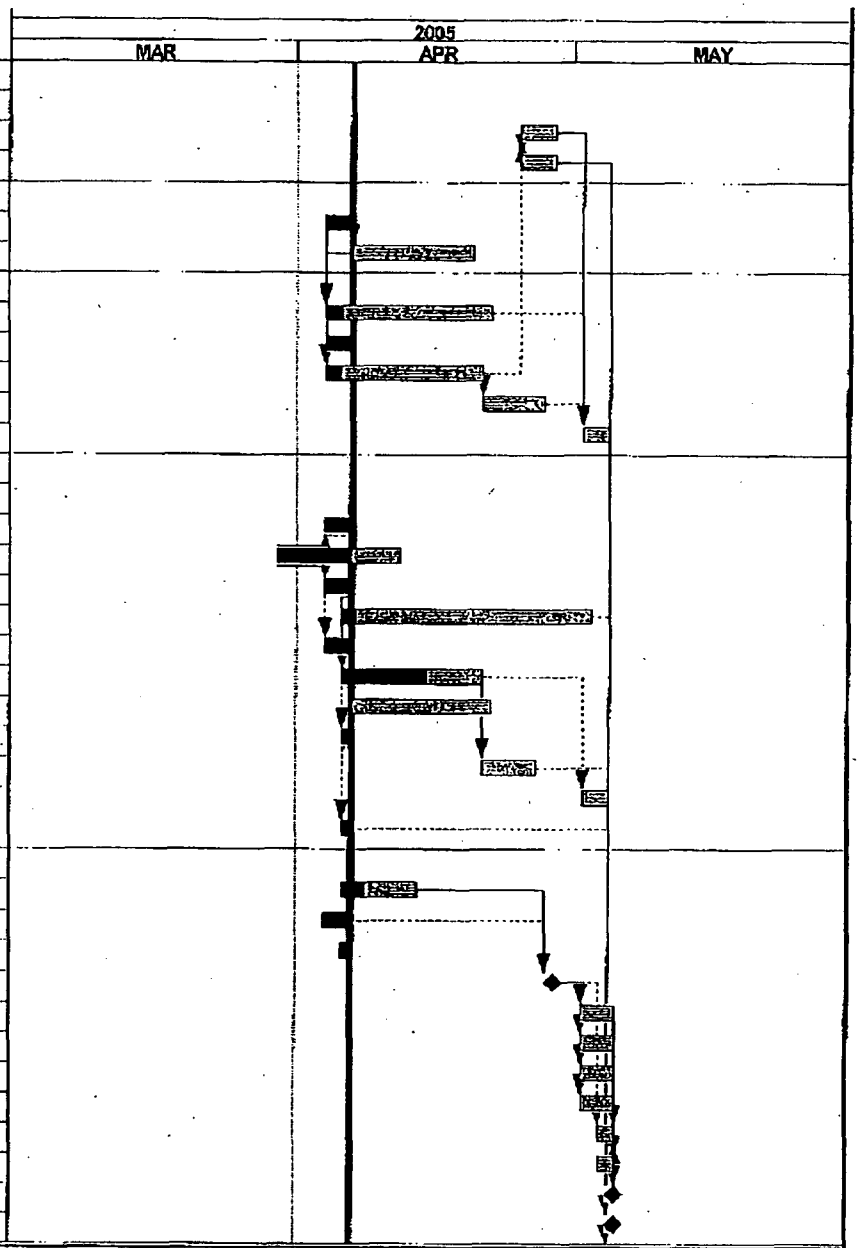
To: Yvonne Mazza From: Linda Kaiser
Fax #: 4542 Pages: _____
Phone: _____ Date: _____
Re: _____ CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Comments:

7

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish
DOWNGRADE T130A FROM RAD TO INDUSTRIAL FACILITY						
Fire Protection						
5010	FPE Prepare DES-210 Calc	4	4	0	25APR05*	28APR05
5030	Install Wireless Smoke Detectors/Fire Extinguish	4	4	0	25APR05*	28APR05
Nuclear License						
5050	Devel New Haz Cat Document	4	0	100	04APR05A	06APR05A
5090	Review/Revise Sys Maintaining Inventory Control	7	7	0	07APR05	19APR05
Procedure Updates						
5150	Elim or Revise Site Docs for T130A (K-H)	10	9	10	04APR05A	21APR05
5140	Review/Revise BERO (K-H)	12	0	100	04APR05A	06APR05A
5120	Review/Revise T130A Procedures	11	8	10	04APR05A	20APR05
5130	Train Personnel on Revised T130A Procedures	4	4	0	21APR05	27APR05
5160	IVR for Industrial Facility Status (K-H)	3	3	0	02MAY05	04MAY05
PREPARE T130A FOR OPERATIONS FROM GENERATORS						
Building Requirements						
5180	Deter Sys Requiring 24/7 If Main Gen Fails	4	0	100	04APR05A	06APR05A
5170	Determine Building Power Requirements (K-H)	5	2	60	30MAR05A	11APR05
5220	Determine Sys Requiring UPS/Power Conditioners	5	0	100	04APR05A	06APR05A
5260	Prepare T130A for Wireless Communications (K-H)	17	14	5	06APR05A	02MAY05
5190	Deter Need for Backup Batt Sys for Crit Eqpt	5	0	100	04APR05A	06APR05A
5230	Order UPS/Power Conditioning Equipment	13	8	60	06APR05A	20APR05
5270	Dev Contingency Plan in Case Generator Failure	9	9	0	07APR05	21APR05
5200	Order Backup Battery Equipment	13	0	100	06APR05A	06APR05A
5250	Install UPS and/or Power Conditioners as Reqd	4	4	0	21APR05	26APR05
5240	Install UPS for Critical Computers	3	3	0	02MAY05*	04MAY05
5210	Install Backup Battery Systems (K-H)	5	0	100	06APR05A	06APR05A
Characterization Lab Requirements						
5330	Negotiate New Stoller LICs for Shipping (If Req)	9	4	30	06APR05A	13APR05
5310	Negotiate New LICs w/Analytical Labs Fingerprint	12	0	100	04APR05A	06APR05A
5320	Rev Stoller Procs Sprt Offsite Ship Fingerprints	11	0	100	06APR05A	06APR05A
5350	Characterization Lab Shutdown	0	0	0		28APR05
5360	Characterization Lab Chemical Disposition	4	4	0	02MAY05	05MAY05
5380	Rad Safety & Ops Prep Char Lab Equip for Shutdown	4	4	0	02MAY05	05MAY05
5370	Disposition Drummed Waste in Characterization Lab	4	4	0	02MAY05	05MAY05
5390	Remove Characterization Lab CAM	4	4	0	02MAY05	05MAY05
5410	Rad Safety Concur Shutoff Power to Char Lab	2	2	0	04MAY05	05MAY05
5400	Disarm Characterization Lab Door Alarms	2	2	0	04MAY05	05MAY05
5420	Turnover of Characterization Lab to K-H PDS	0	0	0		05MAY05
5430	Ready for Site Power Shutoff	0	0	0		05MAY05



Start Date 01FEB99
Finish Date 19JAN06
Data Date 07APR05
Run Date 07APR05 12:26

Early Bar
Progress Bar
Critical Activity

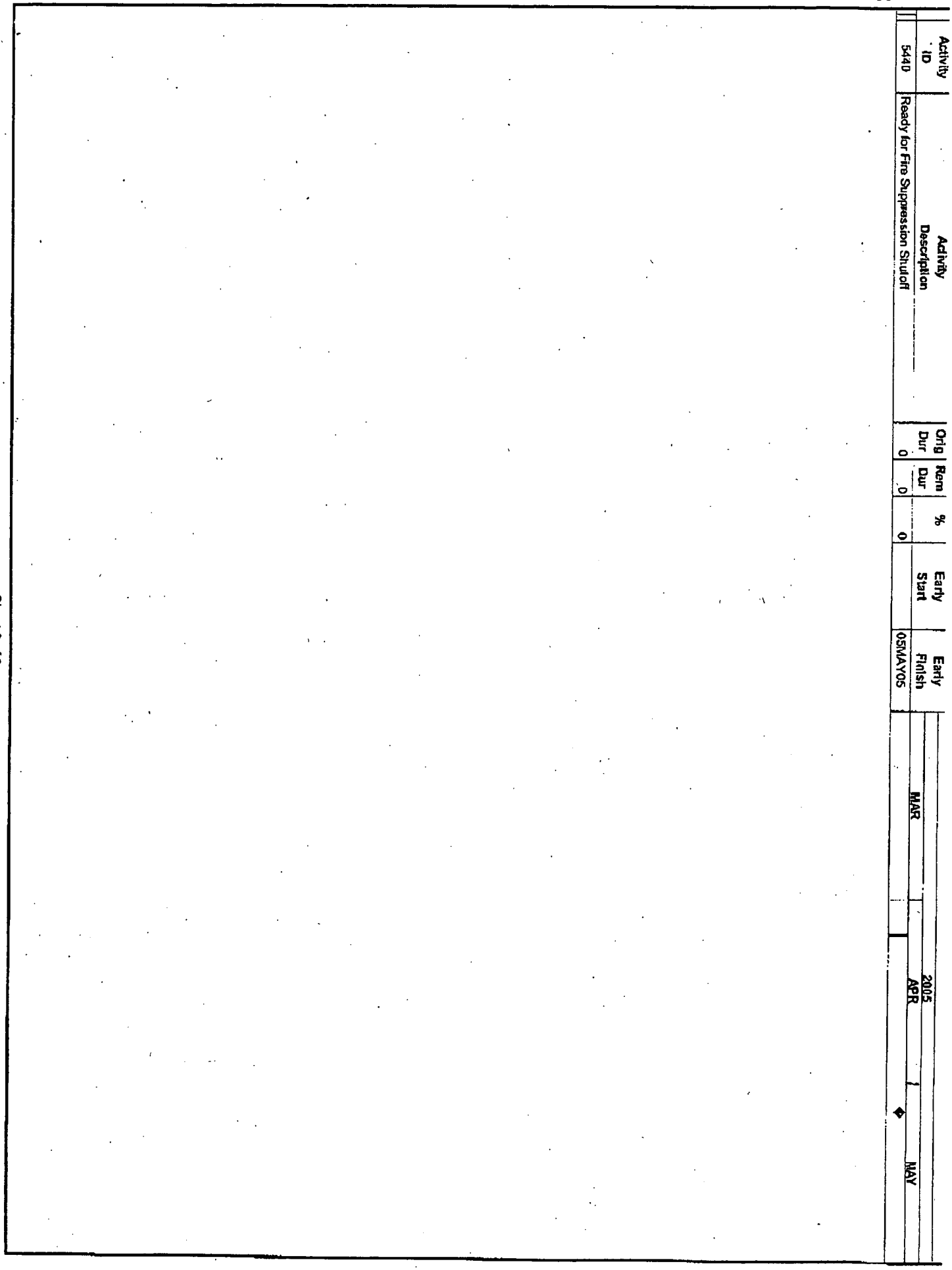
130A

KH
T130A Shutdown Activities

Classic Schedule Layout

Sheet 1 of 2

Date	Revision	Checked	Approved


Activity ID
Activity Description
Orig Dur
Rem Dur
%
Early Start
Early Finish
5440
Ready for Fire Suppression Shutoff
0
0
0
05MAY05
2005
MAR
APR
MAY

9/9 10/10